

petals, which fell while the plants were in the vasculum, were pink, especially toward the base, and the pressed material shows an unusual amount of red coloring in the styles, filaments and calyx-lobes.—N. C. FASSETT, University of Wisconsin.

THE VARIATIONS OF *ASTER FOLIACEUS* IN NEW ENGLAND

LUDLOW GRISCOM AND R. J. EATON

IN RHODORA, vol. 17, 1915, pp. 13–16, Prof. M. L. Fernald published a valuable critique of the hitherto little recognized *A. foliaceus* Lindl. in extreme eastern British America and northern New England, a species further complicating the difficulties of clearly distinguishing the large-headed *Asters* of the section *Vulgares*. This plant with few, large heads, with essentially equal herbaceous or foliaceous involucre bracts “is quite as variable as other species of its affinity, but in spite of its great variability it holds within the Hudsonian and Canadian area indicated the characters above defined and seems to be a pronounced trend such as is ordinarily considered a species in the genus *Aster*.” Prof. Fernald then continues to show that lower plants from alpine and more northern habitats, with short monocephalous branches leafy about the heads, are typical *A. foliaceus* Lindl.; other taller plants have ample leaves and many of the heads on long almost erect naked or nearly naked peduncles (var. *frondeus* Gray); others differ in more serrate leaves, more spreading or arching branches and peduncles (var. *arcuans* Fernald); still others have leafy peduncles and very crenate leaves (var. *crenifolius* Fernald); another variation has the median leaves abruptly contracted and broadly subpetioled (var. *subpetiolatus* Fernald); while a final variation strongly resembles the last in foliage, has the habit of typical *A. foliaceus*, but is easily distinguished by the small usually paired heads and the absence of outer foliaceous bracts (var. *subgeminatus* Fernald). All of these variations were cited from the Gaspé Peninsula, Quebec, or from Newfoundland, but no mention was made of New England material.

The senior author was quite familiar with most of these variations in Quebec and Newfoundland, and was much surprised to find a plant of this affinity with a totally different aspect in the Connecticut River Valley in New Hampshire and Vermont last summer. This

plant in its narrowly linear-lanceolate leaves tapering gradually from the middle to a slightly clasping base and in its sometimes much smaller heads is disquietingly close to *A. longifolius* Lam., but is easily separable in possessing well developed herbaceous bracts, some of which are longer than the inflorescence is high. An examination of the material in the Gray Herbarium and the herbarium of the New England Botanical Club shows that this form is the dominant one from the lowlands of northern New England. It *decreases rapidly* northeastward where some of the other varieties become abundant, and very few sheets indeed exist from localities in Quebec and Newfoundland, where relatively southern elements in the flora do not occur. It is also particularly characteristic of river- or lake-banks throughout its range. It is clearly one extreme of the species, with a definite geographic trend, and would appear fully as worthy of formal separation as other described varieties. It may be characterized as:

ASTER FOLIACEUS, var. **sublinearis**, n. var., caule tenui, $1\frac{1}{2}$ –5 dm. alto, glabro vel piloso; foliis patentibus vel subascendentibus tenuibus glabris lineari-lanceolatis vel lanceolatis acuminatis, basi angustatis vel cordato-amplexicaulibus, obscure serratis vel subintegris, mediis $\frac{1}{2}$ –1 dm. longis $\frac{1}{2}$ –1 cm. latis; involucre 5–8 mm. alto, bracteis lanceolatis herbaceis vel exterioribus foliaceis elongatisque.

Stem $1\frac{1}{2}$ –5 dm. high, glabrous or pubescent; leaves spreading or somewhat ascending, thin, glabrous, linear-lanceolate or lanceolate, acuminate, narrowed at base or cordate-clasping, obscurely serrate or subentire; the median $\frac{1}{2}$ –1 dm. long, $\frac{1}{2}$ –1 cm. wide; involucre 5–8 mm. high, the bracts lanceolate, herbaceous, or the outer foliaceous and elongate.—VERMONT: alluvial bank of Connecticut River, Weathersfield, Windham County, September 4, 1931, *Eaton and Griscom*, no. 14754 (TYPE deposited in Gray Herbarium).

It should be noted that the variations given in the description, other than the bracts, exactly parallel those of *A. longifolius* Lam. and, as in that species, the broader-leaved forms with leaves less attenuate at the base are distinctly rarer southward. Both extremes are represented in the type-collection sheets. Several sheets examined from Quebec are transitional to typical *A. foliaceus*, and Prof. Fernald records similar transitional specimens for other varieties. In so polymorphic a species and section this is only to be expected. Indeed it is merely a question of time and experience before the collector will find plants which impugn in one way or another one or more elements of a specific concept in this most interesting genus.

An older generation ignored such specimens, or in a few famous cases deliberately destroyed them. It is the modern fashion eagerly to collect these less usual mutations, and as a result either to question the value of the older specific concepts or to call the majority of *Aster* specimens hybrids. Both courses are childish, and futile in devising a stable taxonomy, and both ignore the fundamental biology of the group, a genetically unstable and aggressive one, many elements of which have recently recaptured or entered much new territory in northeastern America and have not as yet had time to crystallize by elimination into specific concepts sufficiently definite to satisfy the longings of the amateur in the field or the taxonomist in the herbarium.

An excellent illustration of this principle is the record of *A. foliaceus* from Sandisfield, Berkshire Co., Massachusetts, in Hoffmann's *Flora*, p. 337. This specimen has been most carefully studied, and we are quite unable to endorse this determination. It is true that the heads have well developed herbaceous bracts. But the whole stem from the root up is harshly pubescent or hispid, the leaves are hairy or even scabrous on the upper surface, with very broadly clasping bases, and we have no hesitation in declaring this specimen to be an abnormal form of *A. puniceus*, extreme forms of which are known to develop herbaceous bracts. The only other conceivable course would be to regard this specimen as a hybrid between *A. foliaceus* and *A. puniceus*. This course would be biologically preposterous, until some evidence is discovered to show that typical *A. foliaceus* occurs in the region from which the supposed hybrid came. Considerable evidence exists that *A. foliaceus* does *not* grow there, nor could it be reasonably expected.

We give below a list of the varieties of *A. foliaceus* definitely occurring in New England, citing the majority of the specimens, and all those seen of var. *sublinearis*.

1. Typical *A. FOLIACEUS* Lindley. NEW HAMPSHIRE: Numerous collections recorded by Pease in *Flora of Coos Co.* from alpine and subalpine habitats of the White Mts. VERMONT: a single collection from the summit of Mt. Mansfield (Gray Herbarium).

2. Var. *ARCUANS* Fernald. NEW HAMPSHIRE: Berlin Falls, July 27, 1899, *W. W. Eggleston*, no. 1806. Now in Gray Herbarium, determined by Fernald. Duplicate in N. E. B. C.

3. Var. *SUBLINEARIS* Griscom and Eaton.

In Gray Herbarium: NEWFOUNDLAND: headwaters of Rocky River,

Whitbourne, Avalon Peninsula, 8 Aug. 1911, *Fernald & Wiegand*, no. 6319; Rushy Pond, Exploits River, Aug. 1911, *Fernald, Wiegand & Darlington*, no. 6320; Buchan Junction, 19 July, 1930, *K. P. Jansson*; Table Mt., Port-à-Port Bay, 10 August, 1910, *Fernald & Wiegand*, no. 5121. QUEBEC: River St. Augustin, Saguenay Co., 6 Aug. 1915, *St. John*, no. 90,764; Natashquan, north shore, Gulf of St. Lawrence, 1 Aug. 1928, *Victorin & Rolland-Germain*, no. 28,700; Ste. Anne des Monts, Gaspé Co., 3-17 Aug. 1905, *Collins & Fernald*; St. Raymond, Co. Portneuf, Aug. 1914, *Victorin*, no. 617. NOVA SCOTIA: Yarmouth, 24 July 1920, *Fernald, Bean & White*, no. 22,780. MAINE: Boundary Lake, Aroostook Co., 12 Aug. 1902, *Eggleston & Fernald*; Limington, York Co., 28 Aug. 1916, *Fernald & Long*, no. 14,735. NEW HAMPSHIRE: Berlin, 27 July, 1899, *Eggleston*, no. 1301; North Woodstock, Grafton Co., 3 Aug. 1915, *Fernald*, no. 11,910; Plymouth, Grafton Co., 30 July, 1915, *Fernald*, no. 11,912.

In Herb. N. E. B. C.: NEW HAMPSHIRE: Gorham, Coos Co., 27 Sept. 1916, *Pease*, no. 16,942; Thompson & Meserve Purchase, 12 Aug. 1910, *Pease*, no. 12,834; Bath, Grafton Co., 18 Aug. 1917, *Fernald*, no. 15,586; Ashley's Ferry, Claremont, Sullivan Co., 7 Sept. 1931, *L. Griscom & F. W. Hunnewell*, no. 15,046. VERMONT: Weathersfield, Windham Co., 4 Sept. 1931, *Eaton & Griscom*, no. 14,754; West River, Dummerston, Windham Co., 5 Sept. 1931, *Eaton & Griscom*, no. 14,758.

TWO NEW EVERGREEN HOLLIES FROM CENTRAL FLORIDA

JAMES B. MCFARLIN

WHILE I was engaged in field work for the University of Michigan during the past year, an apparently new and localized species of *Ilex* was discovered in the scrub about Lake Marion, Polk county, Florida. It grows mixed with *Ilex opaca* Ait. and *Ilex arenicola* Ashe but is readily distinguished from both by its extremely small leaves and compact manner of growth. Several colonies have been found scattered through the scrub. Only sterile material was at first collected, February 22, 1931. Flowers were obtained March 17, 1931 at the original station, and again on May 27, 1931 from another location.

Growing with *Ilex arenicola* Ashe on the inland sand dunes about Lake Jackson, near Sebring, Florida, I discovered on June 9, 1931 a small shrub which at first sight I took to be the same as the new *Ilex* from the Lake Marion region, but further examination showed